Are Risk-takers Dividend Payers? CEO Compensation and its Impact on Dividend Decision

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Abstract

Both dividend policy and CEO risk aversion have been subjects of tremendous research over the past 30 years. The current gap is how both topics are sporadically considered in tandem. We provide a solution to this by analyzing dividend changes in the context of CEO risk-taking incentives. Our findings suggest that risk-taking propensity, often overlooked in comparison to pay-performance incentives, negatively explains dividend increases. When we account for a firm's cash flow volatility, we see that risk-taking sensitivities carry a positive relationship with payout. These findings themselves speak to the belief that much of our current understanding regarding dividends must be refocused to encapsulate the effects that CEO characteristics have on payout policy.

JEL Classification: D22, G34, G35, D81

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1. Introduction

In looking at the subject of dividend theory, firm specific factors have been the focus of much literature. Examples of this include firm characteristics ranging from earnings (Lang & Litzenburger, 1989; Benartazi et al., 1997; Grullon et al., 2002; Grullon et al., 2005) to leverage (DeAngelo & DeAngelo, 1990; Christie, 1994; Bulan & Subramanian, 2008). For obscure reasons though, analysis into CEO risk-taking incentive and its link to payout policy has been absent from research. This in a time when the work of Murphy (1998) and Hall & Liebman (1998) has highlighted a rapid transition in CEO compensation over the past century. This shift saw option incentivization becoming more prominent with the goal of aligning managements interests with shareholders.

A worrisome byproduct of this change is that managers are now more risk averse than their shareholders (May, 1995; Smith & Stulz, 1985; Tuffano, 1996). The latest solution to set problem would be looking at risk-taking incentive. Specifically, in the context of dividend policy. Our understanding of dividend literature points to increases in payout representing a long-lasting cashflow constraint (Brav et al., 2005). This speaks to an executives' aversion to cashflow shortfall which is a determining factor in dividend payout (Jagannathan et al., 2000; Grullon and Michaely, 2002; Fama and French, 2001; DeAngelo & DeAngelo, 2006). It has been documented that CEOs prioritize meeting dividend requirements and the implications of not doing so are severe.

With the threat of cashflow shortfall, management commits to a balancing act. They prioritize investing in riskier projects, through their risk-taking incentive, while ensuring that dividends remain payable. Our main finding is that risk-taking incentive has a negative explanatory power in determining dividends per share. We can also expand this inverse relationship to other aspects of dividend policy. These include dividend increases, dividend growth and in comparing dividend payers to nonpayers.

To explain, both risk-taking and pay-performance sensitivities are proxies developed by Core & Guay (1999). They are estimated from option portfolio and stock holdings as disclosed by managements compensation disclosure requirements. These tools allow us to quantify the full makeup of past and present pay a CEO has received from his company. We can then determine if that very same portfolio of wealth tied to the company has an impact on corporate decision making. In the context of corporate finance, examples of the influence sensitivities hold are abundant (Coles et al., 2006; Low, 2009; Dong et al., 2010; Hagendorff & Vallascas, 2011; Croci & Petmezas, 2015; Athanasakou et al., 2016). Covering topics that range from R&D investment to corporate structuring, risk-taking incentive is proven to influence decision making.

Absent from this literature, however, is the link between CEO compensation, measured in the context of risk-taking incentive, and dividend payout. Whereas previous studies have examined CEO wealth and payout policy (Rozeff, 1982; Agrawal & Jayaraman, 1994; White, 199; Fenn & Liang, 2001), they have all found conflicting results. This can be attributed to their use of share ownership, which holds a substantial negative correlation with firm size. Our study uses both the risk-taking and pay-performance proxies to link compensation with dividends. Particularly, we place our attention on risk-taking incentive while incorporating pay-performance as a control variable.

With risk incentive being the primary focus of our paper, we also account for the established relationship between risk and payout. Prior studies find that volatility holds a negative relationship with dividend payers as compared to non-payers (Malkiel & Xu, 2003; Brandt et al., 2005; Fink et al., 2006; Chay & Suh; 2008; Hoberg & Prabhala; 2008). In that vein, it will be of paramount importance to distinguish the effects of volatility and risk-taking incentive on dividends. Additionally, we wish to examine the influence of risk-taking motivation in high volatility firms. In the most volatile firms, risk-taking incentive is found to have a different role than earlier predicted. Those companies are already experiencing high volatility and will be compensated through their risk incentives. There would be little-added remuneration for taking on more risk at that point. A dividend increase would be thus far more likely as compared to a risk inducing project. Our findings support this in that risk-taking incentive interacted with volatility provides use with a positive explanation of dividend per share.

In terms of data concerning payout and CEO compensation, we use separate databases such as Execucomp and Compustat making sure to cross-reference CEO and firm specific data via CORPEROL and GVKEY. In doing so, we obtain both a complete picture of the CEO and firm with accompanying proxy values via Core & Guay (2001) and Coles et al. (2013). From this, we run logit and multi linear regressions in which the regressands are a form of dividend payout. These different forms are represented in the following ways: Dividend per Share, Dividend Growth, Dividend Increases, Constant Dividends, and Dividend Issuers vs. Non-Issuers.

We organize the remainder of our paper as follows: Section 2, the literature review, will provide a review of the existing literature which delivers a theoretical justification for our hypothesis and highlights the importance of the study. Section 3 provides different data sources used in addition to providing a methodology to our findings. Section 4 presents an analysis into the results of risk-takings impact on dividend level and increases. Section 5 concludes our study by summarizing our key findings and providing future research considerations.

2.1 Literature Review

2.1.1 Dividends and Risk

In looking at the reasoning behind dividends, we are met with multiple conflicting theories to explain payout (Battacharya, 1979; Rozeff, 1982; Easterbrook, 1984; Jensen, 1986). We choose to focus on uncontested aspects of payout. Notably, that cash dividends require free cashflow to be paid. If the funds needed for a dividend are not available, the negative implications are severe. They include high borrowing costs, share price crashes and even CEO job losses in the worst of cases (Myers, 1977; Froot et al., 1993; Brav et al., 2005; DeAngelo et Al. 2009). The possibility that cashflow requirements may not be met is manifested in the form of shortfall risk.

On the subject of risk, literature finds a negative relationship in explaining dividend payout (Malkiel & Xu, 2003; Brandt, Brav & Graham, 2005; Fink et al., 2006; Hoberg & Prabhala, 2008). These works focus on volatility, often measured through cashflow or earnings, as negatively explaining the propensity to issue and increase dividends. This is confirmed with later papers emphasizing that volatility is the solution as to why fewer firms are initiating dividends in the 21st century. The idea that risk can explain the reduction in dividends extends even before that. Some of the seminal work on dividends finds that volatility, measured in different forms, can have a substantial impact on payout policy (Eades, 1982; Miller & Rock, 1985; Fama & French, 2002). For the sake of our work, we focus on risk defined as cashflow volatility. It is this method that prior research highlights has the explanatory power in the context of dividends (Bradley et al., 1998). Also, risk managers themselves emphasize the importance of analyzing cashflow volatility in determining related risk decisions (Shapiro and Titman, 1986; Stulz, 1990; Froot et al., 1993; Shimko, 1997).

2.1.2 Executive Compensation and Risk-Taking Incentive

Toward the end of the last century, work by Hall & Liebman (1998), Murphy (1999) and Hall & Murphy (2001), show a distinct propagation of option payments in the structure of CEO compensation. Also, the average equity for top executives has risen to thirty times as large as their annual total salary. This idea adds upon the analysis of Core, Guay & Larcker (2001). They found that growth firms had a higher proportion of options awarded as compared to other industry types (2001, p.7);

The use of stock options and restricted stock in high-technology, new economy firms substantially exceeds the equity compensation in large, old economy manufacturing firms.

A justification for this discrepancy was that higher option concentration addressed CEO risk aversion. Companies in the technology industry would need to spur growth through riskier endeavors as compared to more mature industries. With executives having already been shown to be risk averse to the detriment of their shareholders (Amihud & Lev, 1981; May, 1995; Smith & Stulz, 1985; Tuffano, 1996), a compensation scheme concentrated on options would provide a solution. A monetization scheme weighted towards options would reduce the impact of the agency issue (Jolls, 1998; Aggarwal & Samwick, 1999; Guay, 1999; Denis and Mihov, 2003; Chava & Purnanadam, 2009; Armstrong & Vashishtha, 2012). Defusco et al., (1990) provide credence to this belief in finding that disclosures related to stock and option incentivization plans have empirically been met with positive price returns. This point a representation that options are inducing management to be riskier, in line with what shareholders wanted. Given the direct relationship between option value and underlying volatility in the Black Scholes Merton model, riskier strategies would maximize CEO option wealth. Coupled with the fact that a typical CEO salary no longer relies on flow compensation (Jensen & Murphy; 1990), we see causation between current day incentivization and corporate decision making.

In wishing to quantify risk-taking propensity of executives, we focus our attention on the proxy Vega, as developed by Core & Guay (2001). This is a departure from earlier studies that solely relied on options or share ownership. Those works found contradictory conclusions for compensation and dividend policy (Rozeff, 1982; Agrawal & Jayaraman, 1994; White, 1996; Fenn & Liang, 2001). Based on annual disclosure statements and the Black & Scholes (1973) and Merton (1973) adjusted model, we find the dollar change in CEO portfolio wealth for a one percent change in the company's underlying stock price volatility. This new proxy of sensitivity captures over 99% of actual portfolio value variation as tested through market data and simulation (Core et al., 2002). A later adjustment by Daniel et al. (2013) considers changes in accounting standards. This allowed for greater information regarding tranche level details for option grants before 1992, representing a significant portion of CEO portfolio wealth. A similar proxy titled Delta accounts for pay-performance incentive.

Also of importance is the emphasis we place on the CEO of a company as opposed to other management figures. It is true the dividend decision is confirmed by the board of directors (DeAngelo et al.,2009). However, we find evidence stressing the importance of CEO behavior in dictating decisios made at the highest levels of corporate structures (Cronqvist et al., 2012). Findings support that CEOs hold a substantial input in companywide decision-making, even more so than CFOs (Chava & Purnanadam, 2009). When we consider CEO wealth, we find that a significant portion of portfolio wealth is reflected in company shares (Core et al., 2002). This makes it so shareholders are comparatively more diversified in their portfolio wealth. The last point speaks to the creation of a juxtaposition between shareholder risk appetite and management's risk-taking motivation (Myers, 1977; Murphy, 1999; Coles et al., 2006). This reinforces the importance risk-taking monetization in dealing with CEO risk aversion and by extension, decision making. When constructing compensation schemes for the CEO, the board must find a means to ensure the risk-taking incentive is appropriately present.

Our measure of risk-taking sensitivity is shown to have an impact on corporate policy (Guay, 1999; Cohen et al., 2000; Coles et al., 2006; Croci & Petmezas, 2015). These findings pertain to how Vega positively explains increases in leverage, R&D, and volatility. Vega also has a negative role in determining capital expenditures and diversifying acquisitions, both considered to have little impact on increasing volatility. Overall, prior literature speaks to the fact that risk-taking incentive has the undeniable effect of making CEOs pursue riskier endeavors.

2.1.3 Executive Risk-Taking tied to Dividend Payout

Given our understanding of risk and dividends, CEOs incentivized to take on risk would avoid increasing dividends. This follows the belief that a higher Vega causes CEOs to invest in more volatile projects instead (Guay, 1999; Cole et al., 2006). Given the finite amount of internal cashflow available for expenditures, dividends represent a constraint to management. The implications of a cashflow shortfall occurring include a dividend cut whose negative effect on stock price is well documented (Pettit, 1972; Aharony & Swary, 1980; Woolridge, 1982; Eades et al., 1985; Healy and Palepu, 1988).

In a scenario where a large portion of portfolio wealth is derived from risk-taking incentive, the reluctance to altering payout would be amplified. The danger of increasing downside loss is reinforced by survey data over the years which stresses how management practice dividend conservatism (Lintner, 1956; Brav et al., 2005). The latter paper strengthens this point with CFOs revealing that maintaining a consistent dividend with historical payout policy as either important or very important to setting new dividends. Those same respondents claimed risk as being a key determinant in setting new policy.

Given the structure of compensation that emphasizes risk-taking, proxied by Vega, we would expect management to limit the amount paid to dividends and instead choose more volatile projects. Conversely, in a firm with high earnings volatility, risk-taking incentive will be already satisfied. Standardized measures of risk will show a CEO incentivized to take on risk has completed his or her mandate. As a result, the impact of risk taking incentive will vary depending on the volatility already associated within a firm.

The impact of risk extends beyond increasing dividends but in looking at dividend growth and comparing dividend payers vs. non-payers. Also, it is important to note the asymmetry between increases and cuts in dividend level. In the context of risk, we would not expect a CEO with high risk-taking incentive to actively pursue a dividend cut, or more severely an omission. This can be attributed to the overwhelming negative market reaction and management's general reluctance towards such corporate policy (DeAngelo & DeAngelo, 1990; Allen & Michealy, 2003; Brav et al., 2005). The documented asymmetry between increases and decreases in payout (DeAngelo & DeAngelo, 1990; Allen & Michealy, 2003) speaks to the fact that both should be analyzed separately in the context of risk-taking incentive. In part due to the presence of pay-performance incentive that has empirically been shown to dominate risk-taking incentive (Core & Guay, 2001).

2.2 Hypotheses Development

In applying our understanding of dividends and their relationship to CEO risk tolerance and pay-performance, we can hypothesize that Vega will negatively predict dividend level. This is grounded in the belief that higher risk-taking incentive would lead management to invest in riskier projects instead of dividends. Rational CEOs with high risk-taking incentive who seek wealth maximization would focus on pursuing riskier projects to maximize portfolio wealth. To add to this belief, executives would also limit their downside risk in that they would not grow their payout demand.

Hypothesis 1a: *CEO risk-taking incentive negatively affects Dividend per Share, ceteris paribus.*

This work is advanced by our analysis into dividend increases and constant dividends. Specifically, we will try to explain dividend increases through risk-taking incentive and earnings volatility. Our first and most important belief is that risk-taking incentive, proxied by Vega, will negatively predict increases in dividend level. The framework this follows is like how we justified the negative explanatory power of risk taking in determining Dividend per Share. A higher risk-taking incentive would lead a CEO to fund projects that are considered risky. We expect this understanding to apply to dividends remaining constant as well. An important distinction with keeping dividends constant over the year ensures shortfall possibility is not augmented. This allows for investment in risk inducing projects while keeping the possibility of a cashflow crunch limited. As such, risk-taking incentive will be predictive of keeping the dividend fixed.

Hypothesis 2a: *CEO risk-taking incentive negatively affects the occurrence of dividend increases, ceteris paribus.*

Hypothesis 2b: *CEO risk-taking incentive positively affects the occurrence of a dividend remaining the same, ceteris paribus.*

Incorporating the impact of earnings volatility, we contrast high and low volatility on payout. This is done to verify that risk-taking incentive has a separate impact when volatility has already been achieved. We do so by interacting our Vega proxy with measurements of earnings volatility. This provides a basis to see if firms with both higher earnings volatility and risk-taking incentive will be more likely to increase dividends. The expectation is that a CEO who is incentivized to take on risk and whose firm has high volatility has already achieved his goal. As such, investments in riskier projects will not be needed, and dividends will no longer be a bane to portfolio wealth. To provide an example, let us imagine two companies are both required to pay 100$ in dividends. The first company has low cashflow volatility and expects either 100$ or 300$ when dividends are due. The higher cashflow volatility firm expects either 0$ or 400$. In this scenario, the higher volatility firm does not stand to increase the possibility of shortfall if they increase cashflow towards dividends. It is for this reason that Vega in already volatile firms will have a positive predictive power in dividend growth for firms that have increased their dividend.

Hypothesis 3a: *The effect of risk-taking incentive interacted with volatility on dividend growth is positive in firms.*

3. Data & Methodology

3.1 Dividend Per Share, Dividend Increases and Constant Dividend

The findings in our work will involve multiple measurements of dividend payout as the explained variable. We start with OLS regressions in annual Dividend per Share (DPS), which is calculated and obtained via Compustat using GVKEY as a firm identifier. The average DPS in our sample is 0.34$ and this figure includes 8062 (51%) observations which involve no dividend payment. We also use this to determine Dividend Growth over years, which has an average value of 9%.

We additionally create dummy variables for incidences in which there was an increase or constant payout. These variables take a value of one if the dividend policy occurs or zero if not. We analyze Dividend per Share in cases of dividend increases for robustness in our results regarding risk-taking incentives impact on payout. Our data finds 5625 (34%) Dividend Increases and 7673 (47%) instances in which the dividend stayed the same. The remaining dividend movements are cuts and excluded from our work due to their inherit differences from standard dividend policy (DeAngelo & DeAngelo, 1990; Allen & Michealy, 2003; Brav et al., 2005). In dealing with the large number of firms that choose not to pay dividends, we use these firms to contrast Dividend Payers vs. Non Payers in our regression analysis. We find that there are 8062 (49%) firm year observations of firms paying a dividend. Our variable of Dividend Payer takes a value of 1 for each of these firms and 0 for those that issue no dividend. We finally make sure to exclude special dividends and share repurchases from our sample.

[Table 3.1 Frequency and Averages of Dependent Variables]

[Table 3.2 Descriptive Summary of Dependent Variables]

3.2 Risk-taking incentive and Risk: Vega and Volatility

Using portfolio data on Execucomp, we estimate both pay-performance and risk-taking sensitivity as per Core & Guay (2001). We however decide to use more recent literature (Coles et al., 2013) that provides us proxies for risk-taking and pay-performance incentive dating back to the year 1993. A benefit of using this more recent data is that it considers changes in accounting standards. This removes a level of ambiguity about prior stock and option grants that was a criticism directed at the work of Core & Guay. Delta and Vega, our proxies for CEO pay-performance incentive and risk-taking incentive, comes from the data of Coles et al. (2006) and Core & Guay (2002) which provides us motivation metrics centered primarily on portfolio wealth. Their data includes Delta, which represents in our study the dollar value of portfolio wealth associated with a one percent rise in the underlying company's stock price. Vega represents the dollar-value of portfolio wealth related to a one percent rise in the underlying company's stock price volatility. Given that Vega solely derives from a CEOs option portfolio and option value's positive relationship to underlying volatility (Stulz, 1984; Smith & Stulz, 1985), it proves to be a strong proxy of a manager's incentive to increase firm risk. We make sure to scale our proxies by firm assets similar to our treatment of firm characteristics. This method is unique in the treatment of Vega in that other research uses the natural logarithmic value of Vega (Cohen et al., 2000; Coles et al., 2006; Croci & Petmezas, 2015). As such, we find a middle ground in using both methods and seeing if our results hold true. For Vega scaled by assets, we obtain an average value of 0.65$ and for the logarithmic value of Vega, we have 9.89$. When we consider the changes made to our proxies, they are consistent with other metrics of risk-taking incentive (Guay, 1999; Core & Guay, 1999; Barclay et al., 2001; Richardson, 2002).

Incorporating the manager's portfolio of stocks and options, our methodology takes into account both vested and unvested stock options. One important point of consideration is that unearned options or options that require the meeting of a prior agreed upon performance measure be excluded in the calculation of our proxies for CEO pay-performance and risk-taking sensitivity. This is to ensure that CEO portfolio wealth is as accurate a measure as possible of the CEOs current situation and because of the lack of disclosure requirements surrounding unearned options (Core & Guay, 2002; Coles et al., 2013). While some feel that this identical treatment creates a problem due to the inherent differences between vested and non-vested options, we provide two justifications as to why they are treated the same. The first that requirements associated with unvested options are more straightforward and transparent. They involve continued employment at the firm as compared to unearned options, which are conditional on an infinitely diverse set of criteria. Secondly, the fact that the BSM option valuation model treats options valuation the same regardless of vesting status speaks to how both are similar regarding value. Even still, we consider that in removing these performance bonuses from our proxies, our findings underestimate the true impact of pay-performance and risk-taking incentive on dividend policy.

In addition to Vega, we emphasize firms with high earnings volatility. Earnings volatility is constructed as the standard deviation of quarterly earnings before extraordinary items scaled by the book value of total assets over a five-year rolling period (Dichev & Tang, 2008; Jayaraman, 2008). Based on that, we create dummy variables for the highest earnings volatility firms with which we interact with our Vega measurements. This is done to verify our hypothesis regarding risk-taking incentive having a positive impact determining payout in firms with high volatility. We also use a continuous variable of volatility in our work. This to show that our belief is applicable in all cases and not just in the most volatile of firms. We use earning volatility to proxy for cashflow volatility given the high correlation between the two and missing values of cashflow (Graham et al., 2005; Jayaraman, 2008). We realize that earnings are inherently smoother than cashflow and this will understate the impact of volatility in our findings.

3.3 Control Variables

Our CEO control variables stem from data in Execucomp across a period starting in 1990 to current year. Key management characteristics provide variables such as gender, tenure and new CEO. These have empirically been shown to impact corporate policy which dividends fall under (Demarzo & Duffie, 1995; Berger et al., 1997). Especially important is the presence of an interlock agreement which allows for a CEO to hold sway over his own compensation structure. This relates to our own interest in CEO risk-taking incentive. The primary reason for CEO qualitative data inclusion is that it acts as control variables in our analysis and provides more clarity to the effect a CEO has on dividend payout policy.

To supplement that, we find firm-specific characteristics from Compustat via the GVKEY which acts as a unique firm identifier provided to us in Execucomp. Focusing on firm specific data, we include leverage, cash holdings, and profitability, to be consistent with prior dividend literature (DeAngelo & DeAngelo, 1990; Bulan & Subramanian, 2008). Long-term debt is scaled by assets to provide us a measure of leverage with the expectation being that debt would limit the ability to increase dividends (Crutchley & Hansen, 1989; Jensen et al., 1992). Cash holdings work in the opposite manner in that more cash on hand has been shown to lead to higher dividends and dividend initiations. Our definition of cash holdings is cash and short-term investments similarly scaled by total assets (Opler et al., 1999; Bates et al., 2006). Finally, profitability is simply earnings, scaled by total assets (Fama and French, 2002) which we expect to be positively related to both dividend per share and dividend increases.

We also incorporate firm size and growth opportunities (Desmukh, 2003; Fama & French, 2002; Bulan et al., 2005; DeAngelo & DeAngelo, 2006). The role of firm size can be attributed to information asymmetry being lower with larger firms because of stable cash flows and higher analyst coverage among other factors (Bushan, 1989; Eaton & Rosen, 1983; Chari et al., 1988; Smith & Watts, 1992). Market to book ratio is used to capture investment and growth opportunities. This was incorporated under the belief that the market value of equity scaled by its book value will be indicative of whether a firm was considered to be growing or already in the mature phase (D'Mello & Ferris, 2000). Some studies include lifecycle via retained earnings (DeAngelo & DeAngelo, 2006) under the expectation that older more mature firms will have established retained earnings. We do not, primarily because much of retained earnings in our sample is both negative and large in magnitude. Additionally, retained earnings shows a weak correlation with life-cycle stage.

[Table 3.3 Independent Variable Definitions and Data sources]

When we cross-reference the Execucomp database with our Delta and Vega values mentioned above and Compustat data using Coperol as a unique CEO identifier, we are presented with 16,331 observations with both firm-specific and CEO data. In removing both Financials and Utility firms via their SIC codes (6000-6999 & 4900-4999) and accounting for observations with missing data, this number is further reduced to 16,248 observations. All observations at this point are winsorized at the 1st and 99th percentiles to eliminate outliers.

[Table 3.4 Summary Statistics]

[Table 3.5 Pearson Correlation coefficients among Independent variables]

3.4 Methodology

With our data, we run a multivariate regression on dividend per share with CEO and firm characteristics to confirm hypothesis 1a, as seen below.

$$\text{Dividend per Share} = \beta_0 + \beta_1\text{Delta} + \beta_2\text{Vega} + \beta_3\text{Volatility} + \beta_4\text{Vega}\times\text{Volatility} + \text{Controls} + \epsilon_\tau \quad (1)$$

Our coefficient of interest in this model will be β_4 in determining if risk-taking incentive dictates dividend level. The expectation being that the coefficient is significant and negative. We also place emphasis on β_4 expecting that in high volatility firms we will be able to find that Vega has a positive explanatory power in payout. The change in sign associated with the coefficients of Vega and Vega interacted with volatility can be explained. In a firm with high volatility, the CEO will have already achieved his goal of increasing risk. As such, a dividend will not carry with it the same repercussion of limiting the projects a CEO has to invest in. In a comparatively less volatile firm, a CEO will have to invest in more riskier projects to increase his portfolio wealth. In this case, the CEO will not be satisfying his risk-taking incentives and will try to recompense by investing in projects that will increase volatility in the firm. The ability to increase the dividend will be forgone for riskier possibilities, affirming hypothesis 3a.

We also run a series of logit regressions in which the explained variable would take the form of dividend policy in the following ways: dividend increases, constant dividend and dividend payers vs. non-payers.

$$\text{Logit (Dividend Policy / (1} - \text{Policy)} = \beta_0 + \beta_1\text{Delta} + \beta_2\text{Vega} + \beta_3\text{Volatility} + \beta_4\text{Vega}\times\text{Volatility} + \text{Controls} + \epsilon_\tau \quad (2)$$

The variables of interest to us in the logit regression models are primarily Vega and the interaction with volatility. We expect significance for β2 in the setting of both dividend increases and constant dividends affirming hypotheses 2a and 2b. Like our expectation regarding Vega and dividend per share, we expect the coefficient to be negative in explaining dividend increases. Conversely, we expect Vega to have a positive coefficient in explaining dividends remaining constant. This goes back to our understanding that managers incentivized to take on risk need funds to bankroll their pursuit of risk. Keeping a dividend constant allows for this whereas increasing a dividend would limit cash flow and not increase the risk profile of the firm.

Our use of logit regressions presents us a problem in that a minority of papers use more complex survival models, which consider the entire history of the firm (Desmukh, 2003; Bulan et al., 2005; Bulan & Subramian, 2007). We respond to this by incorporating three years equally weighted rolling averages of the firm characteristics when applicable. In doing so, we provide smoothed values for our explanatory variables under both categories of firm specifics which considers a longer period rather than the year of the event. The primary benefit of this is to not look at immediate changes in the year prior which in some cases may distort findings as they pertain to payout dates not aligning with announcement dates. We also create industry dummies via Fama & French's 12 industry classifications using the SIC code provided in Execucomp. Similarly, market shocks are accounted for by assigning annual dummies for all the years used and our data is winsorized at the 99% level.

4. Analysis

4.1 Dividend Per Share and Dividend Growth

In our analysis of dividend payout, we wish to focus on the impact of risk-taking incentive on different ranges of payout changes. We begin by analyzing the change in dividend per share.

[Table 4.1 Dividend Per Share Model]

Immediately we see that Vega does have a statistically significant influence on dividend per share in the series of regressions confirming hypothesis 1a. In all iterations of the model, columns (1) to (4), we find a significant coefficient associated with Vega. These values are all negative which indicates that a higher risk-taking incentive explains a lower dividend per share among firms. This speaks to the fact that a manager paid to increase the volatility of his or her firm would be reluctant to invest the company's free cash flow into payout. Instead, they would opt for other projects that are categorized as having a higher risk profile. The aforementioned does affirm the underpinnings of our research discussed earlier. Primarily, that risk-taking incentive is effective in making managers veer away from non-risky endeavors (Eades, 1992; Guay, 1999; Coles et al., 2006).

In turning our attention to the volatility in the firm, we find in column (4) that volatility does have a negative coefficient, albeit statistically insignificant. Our variables of interest, an interaction of risk-taking incentive with firm volatility, is positive and significant at the 10% level. With a coefficient of 3.452, we find that in a firm with more volatile cashflows, risk-taking incentive could influence a manager to place more money into dividends. This may seem to be the direct opposite of what we found in regards to Vega and payout. The explanation for this discrepancy is that when accounting for volatility in the firm, risk-taking incentive doesn't dictate CEOs to avoid dividends. To justify that, the more volatile the firm, the more risk-taking incentives have already been met. With the point of the incentivization having already been satisfied, CEOs are no longer forced to invest in obscure projects and can revert to more traditional outlays of cashflow. Dividends definitively fall under the latter in that they are not associated with risk in the form of volatility, but rather with shortfall risk (Malkiel & Xu, 2003; Brandt, Brav & Graham, 2005; Fink et al., 2006; Chay & Suh, 2008; Hoberg & Prabhala, 2008). Shortfall risk is not compensated for via risk-taking incentive. This makes dividends a suitable investment for managers once they have already achieved their goal of portfolio maximization.

Our model with both CEO and firm characteristics is comprehensive in finding the determinants of dividend per share. The explanatory power of the model is profound with an R squared value of 14%, in line with similar research done in the field of risk-taking incentive (Coles et al., 2006). Those studies and our own don't aim to forecast dividends. Our goal is to solely determine the role risk-taking incentive plays in formulating dividend policy. We also verify control factors that we expect to be positively related to dividends per share such as size and profitability. These factors are shown to be statistically significant and positive, consistent with prior literature (Fama & French, 2002;). We also find that leverage and CEO tenure holds a negative explanatory power explaining dividend per share (Bulan & Subramian, 2008; DeAngelo et Al.2009). Leverage as it pertains to greater cashflow requirements and CEO tenure as it points to management often accumulating many options over time. The latter point is related to wanting to maximize portfolio wealth given the positive relationship between risk and option value. As we explained with risk taking incentive, when increasing risk is a priority, dividends are avoided.

Pay-performance incentive, proxied by Delta, is also significant and negative. With our understanding of the positive price reaction associated with dividend growth (Lease et al., 2000; Allen & Michealy, 2003; Frankfurter and Wood, 2003), we would expect the coefficient to be positive. To explain, CEOs with higher amounts of wealth tied to stock price would rationally want to pursue payout policy that would maximize their financial well-being. The phenomenon of pay-performance having a negative impact on dividends relates to the belief that pay-performance itself is a bonding mechanism applied to management. Similarly, dividends act to soak up free cash to ensure management does not act against the will of shareholders. The presence of both creates a redundancy of bonding tools and as a result, the occurrence of high pay-performance often precludes higher dividends (James et al., 2016).

To further substantiate our findings related to risk-taking incentive, we also analyze dividend per share growth in firms that have increased dividends as a dependent variable.

[Table 4.2 Dividend Growth Model]

The primary differences in this model can be seen in alternatives forms of our variables of interest. Risk-taking and pay-performance incentive are both not scaled by assets whereas our volatility variable is switched to a binary value. In this instance, the variable high volatility indicates that a firm is in the highest quartile of earnings volatility. Even with different measurements of our explanatory variables, many of our findings remain unswerving.

Our risk-taking incentive proxy is both significant and negative in explaining dividend growth. This validates that risk incentive has the impact of veering a manager away from raising dividend outflow. Whether it be dividend level or the first difference, we see that Vega has a direct influence on dictating dividend policy. The reasoning behind this is also alike to what we previously discussed. If a manager wishes to increase the risk profile of his firm, to maximize their own portfolio wealth, they would opt for riskier projects. Investment in R&D or diversifying mergers are both examples of policy that have been positively explained by risk-taking incentive (Shimko, 1997; Coles et al., 2006). Whereas those cash outflows are considered volatile investments, dividends, on the other hand, are considered to be a much more conservative outflow (Brav et al., 200e). As a result, a manager compensated to take on risk would do away with the long-term cash drain of dividends. They would instead opt for short term projects that would have more variation in their possible outcomes than dividends.

Incorporating volatility into our model, we see in column (4) of Table 4.2 that our binary variable for high volatility has a negative coefficient again. However, like what we saw with dividend per share in Table 4.1, the variable is statistically insignificant. This is tempered by our interaction term for the high quartile of volatile firms and Vega, which is significant and positive. This finding goes hand in hand with our belief about compensation and dividends. In this case however, compensation has already been achieved due to the firm having high earnings volatility. A CEO would have already satisfied his risk-taking incentive and would even be compelled to increase dividends. We say compelled because of the free cash flow available. It is widely known that having too much free cash flow exasperates the agency issue (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986; Easterbrook, 2001). As a result, management would view a dividend increase as suitable in that scenario. This would allow for free cash flow to be soaked up and be used as a bonding tool. Having an abundant amount of cashflow with incentives already met could be potentially dangerous in the form of an egregious use of funds.

Overall, both the findings in our model of dividend per share and dividend growth validate hypothesis 1a and 3a. We confirm that risk-taking incentive has a negative impact on payout policy but that this changes in firms with higher earnings volatility. Notable control variables that are positively related to dividend growth include size, profitability, and cash on aand. These have direct causation as to why they increase dividend payout. In the instance of cash on hand, we believe that more cash available to a firm allows for management to distribute their internal funds. Unsurprisingly, the variable profitability has the greatest impact on dividend growth, consistent with prior research (Fama & French, 2002; Bulan et al., 2005; DeAngelo et al., 2006).

4.1 Dividend Increase, Constant Dividend and Dividend Issuers

Moving on to a deeper analysis of dividend policy, we focus our attention on analyzing dividend movements. This is done by conducting a series of logit regressions in which the dependent variable takes a value of 1 if the following criteria are met: increase in dividend from the prior year and constant dividend over the past year. We also contrast firms that choose to issue a dividend against those that do not.

[Table 4.3 Dividend Increases and Constant Dividend Model]

We importantly find that dividend increases in column (1) are shown to be partially explained by their negative relationship with Vega, confirming our earlier findings in dividend per share and dividend growth. The magnitude of the coefficient is also greater compared to other models. This indicates that risk-taking incentive has an even greater impact on the occurrence of a dividend increase than it does in the previous models. The value of -0.751 is substantial indicating that Vega has quite a considerable say in the occurrence of an annual dividend increase. This confirms hypothesis 2a linking Vega with dividend increases. Also of note is that our volatility variable is negative and significant. This is in line with research relating to risk and payout being inversely related (Denis & Osobov, 2008; Von Eije & Megginson, 2008; Chay & Suh, 2008; Hoberg & Prabhala, 2008; DeAngelo et al., 2009). Our distinction to this finding is that whereas risk is used to explain dividends, we use risk-taking motivation in the context of risk instead. The underpinnings of volatility negatively explaining dividend increases can be seen in how more volatile earnings translates to uncertain cash inflow outcomes. In turn, higher variability in earnings makes it difficult to earmark the funds required for a dividend increase in the long-term future. Considering the negative implications of not having enough funds to cover a dividend, it is clear as to why volatile firms avoid dividend increases. These range from increases in the cost of borrowing to missing a dividend payment (Shapiro and Titman, 1986; Stulz, 1990). The latter of which is avoided at all costs by management.

The concept that risk-taking incentive is impactful on dividend policy is further reinforced by Column (2). The regressand of constant dividend in Table 4.3 shows the regressor Vega has a significantly positive explanatory power. The coefficient, in this case, is even larger at 1.009. To explain this result, managers incentivized to be risk-takers will invest in riskier projects (Guay, 1999; Cohen et al., 2000; Coles et al., 2006; Croci & Petmezas, 2015). Secondly, they attempt to do so while ensuring their cashflow requirements are not increased thus lowering the probability of having a cash shortfall (Fazzari et al., 1988; Bradley et al., 1992; Minton & Schrand, 1999). It is noteworthy that solely in the case of keeping the dividend constant is the coefficient for Vega positive and that large in magnitude. It speaks to the implications that CEOs must face in pursuing risk because of their compensation structure. Keeping a dividend constant would provide added flexibility while avoiding the negative repercussions associated with a dividend decrease (DeAngelo & DeAngelo, 1990, Bulan et al., 2007). Supporting this justification is the finding that volatility positively explains the occurrence of a constant dividend. This speaks to need for financial flexibility that a constant dividend provides as compared to increasing payout.

Both hypotheses 2a and 2b are confirmed through these logit regressions. In wishing to explore further the predictive power of risk-taking incentive on dividend policy, we analyze column (3) in Table 4.3. In this instance, the dependent variable takes a value of 1 if any cash dividend was paid or 0 otherwise. In doing so, we determine that risk-taking incentive has a negative impact on dividend issuers with Vega having a coefficient of -1.043 and being statistically significant. In accordance to what we’ve seen in Table 4.1 and 4.2, Vega highlights the fact that risk-taking incentive negatively explains a firm opting to pay a dividend. CEOs with higher Vega are less likely to pay a dividend as compared to their counterparts with lower Vega.

5. Conclusion

In concluding our work, we wish to convey a message that stresses the actual results: risk-taking incentive plays a role in how dividend policy is formulated. Some of the most established literature speaks to the inverse relationship between risk and dividends (Bhattacharya, 1979; Miller & Rock, 1985; Fama & French, 2002). We have incorporated risk-taking incentive to delve further into this concept. This is exemplified in our analysis of dividend increases and constant dividends. In those cases, our proxy for risk-taking sensitivity Vega, is significant. This follows the understating that if a CEO is being paid to increase volatility they will invest in risky projects. Dividends will be avoided because they represent a long-term cash constraint that in turn hinders portfolio wealth. This justification is reinforced by how in firms with high volatility, risk-taking incentive positively explains the phenomenon of higher dividends. In those firms, risk incentives have already been achieved, indicating that non-risk orientated policy could be pursued, even among managers with higher Vega.

These findings are relevant in real life instances. Imagine how the discrepancy between risk tolerance and risk-taking ability could be alleviated via risk-taking incentives (Brav et al., 2005)? Even the risk-taking incentive of the CEO could be analyzed so that stakeholders could vet the head of their company. This extends beyond solely shareholders concerned about dividend policy but to debt holders and creditors as well.

With that said, both risk-taking and pay-performance incentive, coupled with other established firm and CEO characteristics, can and should be used in analyzing dividend policy. It is not our goal to find a definitive answer as to what drives dividends. We rather propose that CEO risk-taking compensation plays a role. With our results, we believe to have validated this belief. Coupled with other research, one can provide a stronger understanding as to the determinants of dividend policy.

About how to further develop this research, we plan to address the concern brought forward in Chav & Purnanandam (2009) which contests that the CEO is less involved in corporate policy than some behavioral finance studies assume. They place at odds the Delta and Vega of the CEO with the CFO and find that the latter has more of an impact in corporate decision making. Using our measures for both Delta and Vega provided by Coles et al., (2013), we have figures on all executive members of the management team which includes CEO, CFO, COO, and others. It would be worthwhile to comparatively analyze a company's management and see whose incentive has the greatest impact on policy decisions in the realm of dividend policy and possibly more.

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Table 3.1 Frequency and Averages of Dependent Variables

The below table and figure present the quantitative summary of our dependent variables. In terms of binary variables, we have Dividend Increases, Constant Dividend, Dividend Decreases, and Dividend payers. We also include our two continuous dependent variables Dividend per Share and Dividend Growth. These values are taken from our final sample of 16,307 firm year observations.

	Dividend Increases (Percent)	**Constant Dividend (Percent)**	**Dividend Decreases (Percent)**	**Dividend Payers (Percent)**
Policy Event did not Occur	10689	8641	13298	8268
	66%	53%	82%	51%
Policy Event Occurred	5625	7673	3016	8062
	34%	47%	18%	49%

VARIABLES	**N**	**Mean**	**S.D**	**Units**	**p25**	**p50**	**p75**
Dividend Per Share	16,330	0.349	0.731	$	0	0.0375	0.50
Dividend Per Share Growth	16,330	0.098	2.374	%	0	0	0.042

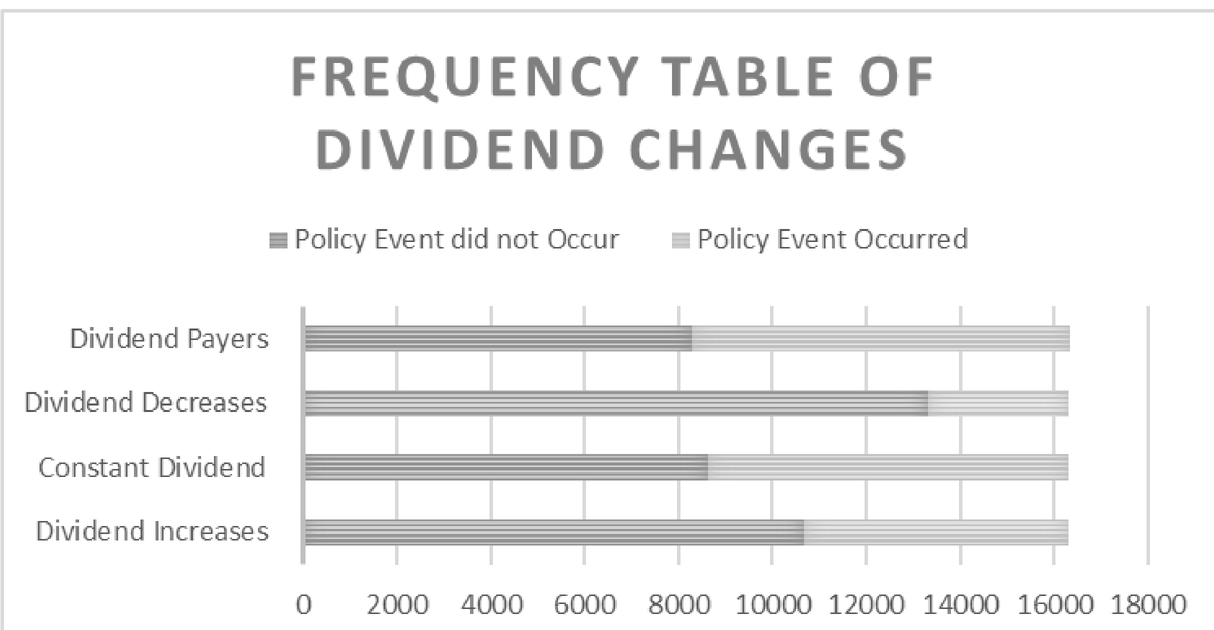

Table 3.2 Descriptive Summary of Dependent Variables

This table presents an overview of the dependent variables used in our research. Dividend Per Share and Dividend Growth represent the only continuous variables whereas all others are binary with a value of 1 if the event occurred, 0 otherwise. Furthermore, all dividends are annually paid in cash as stock dividends are excluded from our sample.

Dependent Variable	***Definition***
Dividend Per share	Measured as current year Cash Dividend scalled by shares outstanding. Obtained via Compustat Annual data
Dividend Growth	Measured as difference in Current Year and prior year Dividend Per Share scaled by and prior year Dividend Per Share
Dividend Increase	Dummy variable with a value of 1 If the Dividends Growth was greater than 0%
Constant Dividend	Dummy variable with a value of 1 when dividend growth in a given year is 0%
Dividend Issuer vs. Non-Issuer	Dummy variable with a value of 1 when firm pays a cash dividend

Table 3.3 Independent Variable Definitions and Data Source

This table presents an overview of the Independent variables used in our research. It is divided into three categories which focus on CEO incentivization, CEO characteristics, and firm specific characteristics. Delta and Vega are based on data from Coles et al., (2006) and Core & Guay (2002) which has been made available to the public for select firms from 1993-2016. Using CORPEROL and GVKEY, we use both Compustat and Execucomp to find pertinent annual data on CEO and firm.

	Variable	Definition	Source
Incentivization metrics	Delta	The change in value (in thousands of dollars) associated with CEO wealth for a 1% change in stock price return. Scaled by firm assets (in millions)	Coles et al (2006) Core & Guay (2002)
	Vega	The change in value (in thousands of dollars) associated with CEO wealth for a 1% change in annualized stock return volatility. Scaled by firm assets (in millions)	Coles et al (2006) Core & Guay (2002)
	Ln (Delta)	The natural log of the value of Delta	Coles et al (2006) Core & Guay (2002)
	Ln (Vega)	The natural log of the value of Vega	Coles et al (2006) Core & Guay (2002)
	High Volatility	Dummy variable in which firms with highest quartile of cash flow volatility are assigned a value of 1	Compustat (Dichev & Tang, 2008; Jayaraman, 2008)
	Volatility	Continuous variable which is based on monthly earnings over the past 5 years	Compustat (Dichev & Tang, 2008; Jayaraman, 2008)
CEO Characteristics	High Volatility*Vega	High Volatility variable interacted with Vega measurement	Compustat
	Volatility*Vega	Volatility variable interacted with Vega measurement	Compustat
	Tenure	Natural logarithm of the number of years the CEO has held the title of CEO at that specific firm. Calculated as the difference between the year of the observation and the year in which the executive assumed the role of CEO	Execucomp (Demarzo & Duffie, 1995)
	New CEO	Dummy variable that takes a value of 1 if CEO is in his or her first three years of new role	Execucomp (Berger et al., 1997)
	CEO Interlock	Dummy variable that takes a value of 1 if CEO is involved in a relationship requiring disclosure pertaining to compensation	Execucomp (Berger et al., 1997)
	CEO Gender	Dummy variable that takes a value of 1 if CEO is female	Execucomp ()
Firm Characteristics	Size	A 3 year rolling average of the natural logarithm of Total assets	Compustat (Miller & Rock, 1985)
	Profitability	A 3 year rolling average of Net Income scaled by Total Assets	Compustat (Fama & French, 2002)
	Leverage	A 3 year rolling average of Total long term debt scaled by Total Assets	Compustat (Crutchley and Hansen, 1989)
	Capital Expenditures	A 3 year rolling of Capital Expenditures less sale of PPE scaled by Total Assets	Compustat (Bulan & Subramanian, 2008)
	Cash on Hand	A 3 year rolling Average of Cash and Short Term Investments scaled by Total Assets	Compustat (Opler et al., 1999)
	Sales Growth	The current periods sales scaled by the previous year's sales level	Compustat (Bradley et al., 1992)
	M/B	Market Value of Equity scaled by Book value of equity	Compustat (Fama & French, 2002)

Table 3.4 Summary Statistics

This table presents the summary statistics of the major independent variables. The negative values of profitability have been verified to be accurate, in addition to the negative capital expenditures which can be attributed to a sale of PP&E. The low number of Interlock agreements and female CEOs has been verified. Additionally, the units in which the data was measured is available in column (7). All variables have been winsorized at the 1st and 99th percentiles.

VARIABLES	N	Mean	S.D	Min	Max	Units	p10	p25	p50	p75	p90
Delta	16,330	0.680	2.283	0	98.57	T/M	0.020	0.052	0.153	0.469	1.414
Vega	16,330	0.075	0.155	0	8.453	T/M	0.001	0.011	0.035	0.089	0.178
Ln (Delta)	16,330	12.217	1.735	0	20.003	Logarithmic	10.301	11.254	12.223	13.249	14.219
Ln (Vega)	16,330	9.898	3.329	0	16.099	Logarithmic	7.097	9.457	10.694	11.760	12.660
High Volatility	16,330	0.249	0.433	0	1	Binary	0	0	0	1	1
Volatility	16,330	0.016	0.017	0.001	0.474	%	0.005	0.007	0.011	0.019	0.032
Tenure	16,312	2.306	1.258	0	4.745	Logarithmic	0.693	1.386	2.197	3.135	4.263
New CEO	16,312	0.208	0.406	0	1	Binary	0	0	0	0	1
Interlock	16,330	0.039	0.192	0	1	Binary	0	0	0	0	0
CEO Gender	16,330	0.001	16.89	0	619.5	Binary	0	0	0	0	0
Size	16,279	20.89	1.608	15.53	27.40	Logarithmic	18.94	19.75	20.72	21.88	23.09
Profitability	16,279	0.036	0.126	-2.832	1.477	M/M	-0.050	0.016	0.051	0.087	0.126
Leverage	16,279	0.209	0.183	0	3.218	M/M	0.000	0.058	0.190	0.314	0.425
Capital Expenditures	16,329	0.064	0.060	-0.470	0.766	M/M	0.015	0.027	0.047	0.079	0.129
Cash on Hand	16,279	0.154	0.169	0	0.945	M/M	0.012	0.0308	0.088	0.220	0.400
Sales Growth	16,318	0.136	0.714	-1	58.09	%	-0.115	-0.001	0.081	0.190	0.375
M/B	16,330	2.063	1.954	0.352	82.47	%	0.992	1.202	1.583	2.290	3.500

Table 3.5 Pearson Correlation coefficients among Independent variables

This table reports the Pearson correlations across the independent variables used in our regression analysis. The correlations are based on all observations in which data is not missing. Standard errors are excluded but may be provided upon request. All insignificant values are given coefficients of 0 with a * denoting significance in the difference from 0 at the 5% level.

	DIVIDEND INCREASE	CONSTANT DIVIDEND	DIVIDEND ISSUER	DIVIDEND PER SHARE	DIVIDEND GROWTH	DELTA	VEGA	LN(DELTA)	LN(VEGA)	VOLATILITY	HIGH VOLATILITY	TENURE	NEW CEO	CEO INTERLOCK	CEO GENDER	SIZE	PROFITABILITY	LEVERAGE	CAPITAL EXPENDITURES	CASH ON HAND	SALES GROWTH	M/B
DIVIDEND INCREASE	1																					
CONSTANT DIVIDEND	-0.685*	1																				
DIVIDEND ISSUER	0.689*	-0.904*	1																			
DIVIDEND PER SHARE	0.388*	-0.421*	0.472*	1																		
DIVIDEND GROWTH	0.104*	-0.039*	0.025*	0.081*	1																	
DELTA	-0.071*	0.099*	-0.103*	-0.069*	0	1																
VEGA	-0.047*	0.064*	-0.062*	-0.037*	0	0.031*	1															
LN(DELTA)	0.127*	-0.088*	0.114*	0.090*	0.017*	0.320*	-0.017*	1														
LN(VEGA)	0.060*	-0.035*	0.048*	0.050*	0	-0.143*	0		1													
VOLATILITY	-0.043*	0.061*	-0.059*	-0.025*	0	0.039*	0.143*			1												
HIGH VOLATILITY	-0.031*	0.047*	-0.047*	-0.018*	0	0.034*	0.143*	0	-0.018*	0.681*	1											
TENURE	-0.148*	0.197*	-0.197*	-0.104*	0	0.083*	0.069*	0	-0.043*	0.073*	0.050*	1										
NEW CEO	0.062*	-0.081*	0.086*	0.051*	0	-0.030*	-0.077*	0	0.016*	0	0	-0.668*	1									
CEO INTERLOCK	-0.027*	0.027*	-0.029*	-0.016*	0	0	-0.021*	0	0	0.019*	0.021*	0.132*	-0.056*	1								
CEO GENDER	0	0	0	0	0	0	0	-0.028*	0	0	0	0.018*	0	0.020*	1							
SIZE	0.315*	-0.364*	0.389*	0.337*	0	-0.217*	-0.065*	0.385*	0.312*	-0.046*	-0.049*	-0.132*	0.058*	0	0	1						
PROFITABILITY	0.183*	-0.163*	0.230*	0.142*	0	0.022*	-0.031*	0.262*	0.040*	-0.015*	0	-0.040*	0.028*	0	0	0.175*	1					
LEVERAGE	0.027*	-0.110*	0.073*	0.065*	0	-0.150*	0	-0.023*	0.069*	-0.016*	-0.024*	-0.061*	0.026*	0	-0.023*	0.288*	-0.185*	1				
CAPITAL EXPENDITURES	-0.023*	0.017*	0	-0.042*	0	0.049*	0	0.040*	-0.052*	0	0	-0.034*	0	-0.033*	-0.024*	-0.043*	0.050*	0.038*	1			
CASH ON HAND	-0.213*	0.320*	-0.321*	-0.139*	0	0.206*	0.031*	0	-0.042*	0.036*	0.048*	0.149*	-0.055*	0.020*	0.036*	-0.351*	-0.140*	-0.363*	-0.161*	1		
SALES GROWTH	-0.053*	0.071*	-0.075*	-0.053*	0	0.095*	0.019*	0.062*	0	0	0	0.031*	0	0	0	-0.083*	-0.062*	-0.022*	0.035*	0.095*	1	
M/B	-0.054*	0.078*	-0.093*	-0.026*	0.021*	0.467*	0.029*	0.239*	0	0.040*	0.038*	0.075*	-0.023*	0	0	-0.176*	-0.019*	-0.112*	0.030*	0.327*	0.148*	1

Table 4.1 Dividend per Share Model

In this regression table, we observe the coefficients of our independent variables against the dependent variable Dividend per Share (DPS). DPS is calculated using current year cash dividends paid scaled by shares outstanding. There are four iterations of our model which focus on different variables explaining dividend level, column (4) representing all variables included. Additionally, year and industry effects are accounted for. All values included are variable coefficients with respective robust standard error underneath in brackets.

	(1)	(2)	(3)	(4)
VARIABLES	CEO Incentivization	CEO Charecteristics	Firm Specific factors	CEO & Firm
Delta	-0.020***	-0.018***	-0.006**	-0.006**
	(0.002)	(0.002)	(0.003)	(0.003)
Vega	-0.250***	-0.205***	-0.119***	-0.219***
	(0.048)	(0.048)	(0.045)	(0.075)
Continuous Volatility				-0.528
				(0.359)
Volatility*Vega				3.452**
				(1.625)
Tenure		-0.067***		-0.037***
		(0.007)		(0.007)
New CEO		-0.064***		-0.032*
		(0.019)		(0.018)
CEO interlock		-0.054*		-0.047
		(0.031)		(0.029)
CEO Gender		0.061		0.076**
		(0.040)		(0.038)
Size			0.141***	0.139***
			(0.004)	(0.004)
Profitability			0.464***	0.465***
			(0.046)	(0.046)
Leverage			-0.089***	-0.083**
			(0.033)	(0.033)
Capital Expenditures			-0.477***	-0.492***
			(0.092)	(0.092)
Cash on Hand			-0.175***	-0.153***
			(0.038)	(0.038)
Sales Growth			-0.023***	-0.022***
			(0.008)	(0.008)
M/B			0.021***	0.022***
			(0.003)	(0.003)
Constant	0.129***	0.427***	-2.732***	-2.524***
	(0.037)	(0.047)	(0.087)	(0.093)
Year and Industry Effects	Yes	Yes	Yes	Yes
Observations	16,330	16,312	16,266	16,248
R^2	0.019	0.026	0.132	0.135

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4.2 Dividend Growth Model

In this regression table, we observe the coefficients of our independent variables against the dependent variable Dividend Growth (DG). Only the firms that increased their dividends are included in this model.LN(Delta) and LN(Vega) are the logarithmic values of the raw Delta and Vega proxies from Cole et al. (2013). The binary variable High Volatility replaces continuous volatility, indicating if a firm is in the highest quartile of earnings volatility. There are four iterations of our model which focus on different characteristics explaining dividend level, column (4) representing all variables included. Additionally, year and industry effects are accounted for. All values in table are variable coefficients with respective robust standard error underneath in brackets.

	(1)	(2)	(3)	(4)
VARIABLES	CEO Incentivization	CEO Characteristics	Firm Specific factors	CEO & Firm
Ln(Delta)	0.018***	0.0180***	0.004	0.003
	(0.006)	(0.006)	(0.007)	(0.007)
Ln(Vega)	-0.011***	-0.010***	-0.013***	-0.016***
	(0.002)	(0.003)	(0.003)	(0.003)
High Volatility Quartile				-0.092
				(0.066)
High volatility* Ln(Vega)				0.010*
				(0.006)
Tenure		0.028**		0.026**
		(0.012)		(0.012)
New CEO		0.029		0.022
		(0.030)		(0.031)
CEO interlock		0.012		0.002
		(0.055)		(0.055)
CEO Gender		0.027		0.008
		(0.065)		(0.065)
Size			0.025***	0.0261***
			(0.007)	(0.007)
Profitability			0.551***	0.552***
			(0.173)	(0.173)
Leverage			0.135*	0.127*
			(0.070)	(0.070)
Capital Expenditures			-0.197	-0.206
			(0.189)	(0.190)
Cash on Hand			0.263***	0.249***
			(0.091)	(0.091)
Sales Growth			-0.085*	-0.089*
			(0.051)	(0.051)
M/B			0.009	0.009
			(0.011)	(0.011)
Constant	-0.029	-0.153	-0.436***	-0.545***
	(0.106)	(0.119)	(0.153)	(0.164)
Year and Industry Effects	Yes	Yes	Yes	Yes
Observations	5,615	5,611	5,605	5,601
R-squared	0.009	0.010	0.017	0.019

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4.3 Dividend Increases and Constant Dividend Model

In this regression table, we find the coefficients of our independent variables that have been regressed against dependent variables that include Dividend Increases (1), Constant Dividends (2), Issuer vs. Non-Issuers (3). These binary values are tracked using GVKEY. All columns represent logit regressions. All values in table are variable coefficients with respective robust standard error underneath in brackets.

	(1)	(2)	(3)
VARIABLES	Dividend Increase	Dividend Constant	Issuers vs Non-Issuers
Delta	-0.015	0.023**	-0.026*
	(0.013)	(0.012)	(0.014)
Vega	-0.751***	1.009***	-1.043***
	(0.289)	(0.270)	(0.285)
Continuous Volatility	-2.865**	4.841***	-4.173***
	(1.436)	(1.371)	(1.441)
Volatility*Vega	8.322	-7.256	8.133
	(8.258)	(8.060)	(8.400)
Tenure	-0.225***	0.315***	-0.314***
	(0.023)	(0.022)	(0.023)
New CEO	-0.286***	0.403***	-0.374***
	(0.061)	(0.062)	(0.064)
CEO interlock	-0.228**	0.157	-0.220**
	(0.105)	(0.097)	(0.103)
CEO Gender	0.097	-0.091	0.187
	(0.132)	(0.129)	(0.136)
Size	0.377***	-0.403***	0.485***
	(0.013)	(0.014)	(0.015)
Profitability	9.523***	-3.973***	11.35***
	(0.380)	(0.257)	(0.375)
Leverage	-1.205***	0.588***	-1.165***
	(0.131)	(0.118)	(0.128)
Capital Expenditures	-2.550***	2.199***	-2.497***
	(0.344)	(0.310)	(0.328)
Cash on Hand	-3.297***	4.016***	-4.656***
	(0.173)	(0.153)	(0.171)
Sales Growth	-0.748***	0.767***	-1.069***
	(0.090)	(0.078)	(0.088)
M/B	-0.106***	-0.088***	-0.116***
	(0.021)	(0.014)	(0.021)
Constant	-7.622***	7.032***	-8.688***
	(0.334)	(0.330)	(0.354)
Year and Industry Effects	Yes	Yes	Yes
Observations	16,247	16,247	16,248
Pseudo R^2	0.1648	0.1890	0.2551

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.10